REMARKS

Claim 23 has been added without introducing new matter.

Claim Rejections 35 U.S.C. §103

Claims 1-22 are rejected, under 35 U.S.C. §103(a), as being allegedly unpatentable by the alleged Applicant's Admitted Prior Art (AAPA) in view of Maleck (U.S. 6,681,281) (hereinafter Maleck) and Wilcox (U.S. 6,185,634) (hereinafter Wilcox). Applicant respectfully traverses in view of the following.

Independent Claim 14 recites preparing disk transaction information by packaging a plurality of data structures comprising the disk transaction in response to the command, as claimed. The rejection relies on Applicant's own background to show this limitation.

The background of the instant application discloses that the preparation includes generating and arranging the transaction information, including PRDs and CPBs for the transaction (see instant application, page 4, lines 15-17). Once the disk controller has the necessary transaction information, the disk controller issues commands to start up the disk drive mechanism and implement the disk transaction (see instant application, page 4, lines 22-24).

Accordingly, the transaction information is generated before the command is issued. Therefore, the disk controller issues a command to startup the disk drive in response to receiving the necessary transaction information whereas

independent Claim 14 recites preparing disk transaction information by packaging a plurality of data structures comprising the disk transaction in response to the command, as claimed.

More specifically, the alleged AAPA fails to teach or suggest preparing disk transaction information by packaging a plurality of data structures comprising the disk transaction in response to the command in the claimed fashion because the background requires that the transaction information be generated before the start up command is issued. As such, the background of the instant application teaches away from preparing disk transaction information in response to the command, as claimed.

The rejection admits that the alleged AAPA in view of Maleck fails to teach that upon receiving a request for a disk I/O, transferring a command causing the startup of a disk drive, as claimed. The rejection relies on Wilcox. Applicant respectfully traverses in view of the following.

Wilcox discloses that a program generates data to be stored on a disk drive (see Wilcox, col. 3, lines 43-44). A DMA controller controls the transfer of the data block from the host memory to the disk drive (see Wilcox, col. 3, lines 46-48). For example, each DMA monitors hold data representing the current state of the DMA transfer being controlled or monitored by that port (see Wilcox, col. 5, lines 4-7). A DMA request is sent to the arbitrator circuit (see Wilcox, col. 5, lines 8-10) and the output terminal provides that data to the DMA engine (see

Wilcox, col. 5, lines 17-19) to perform a DMA burst transfer (see Wilcox, col. 5, lines 27-28). When the burst transfer is over, the data is updated in the selected DMA monitor (see Wilcox, col. 5, lines 38-40).

Accordingly, Wilcox discloses a method of transferring and storing data in a disk drive using a DMA burst transfer. Applicant respectfully submits that data can neither be transferred nor stored in a disk drive, as disclosed by Wilcox, unless the disk drive has completed its startup procedure. As such, the disclosure of Wilcox is directed to a period after which the disk drive has successfully started up. As such, Wilcox fails to teach or suggest that upon receiving a request for a disk I/O, transferring a command causing a startup of a disk drive, as claimed.

The rejection appears to be equating the start signal, as disclosed by Wilcox, to the command for causing the startup a disk drive, as claimed. Applicant respectfully traverses in view of the following.

Wilcox discloses that the monitor state machine remains idle until it receives the START signal (see Wilcox, col. 11, lines 38-42). The monitor state machine enters the load state when the START signal is asserted at the completion of writing the DMA transfer parameters into the appropriate monitor registers in the DMA monitor (see Wilcox, col. 11, lines 63-66). Accordingly, the START signal triggers the machine state to enter a loading state, as disclosed by Wilcox, to load data from the DMA to the disk drive. Entering a loading state, as

disclosed by Wilcox, differs from a command causing the startup of a disk drive, as claimed, because a machine cannot enter a loading state unless the startup procedure associated with the disk drive is complete. As such, the START signal, as disclosed by Wilcox, fails to teach or suggest a command causing the startup of a disk drive, as claimed.

The rejection admits that the alleged AAPA in view of Maleck fails to teach, subsequent to transferring the command causing the start up and before the completion of the start up, as claimed, preparing disk transaction information. The rejection relies on Wilcox. Applicant respectfully traverses in view of the following.

As presented above, the START signal triggers the machine state to enter a loading state, as disclosed by Wilcox, to load data from the DMA to the disk drive. Wilcox discloses determining the address of the beginning of the next sector's worth of data to be store in the memory of the disk drive (see Wilcox, col. 12, lines 11-13 and Figure 1, element 56). Wilcox further discloses that the DMA transfer stores data at sequentially addressed locations in the memory in the disk drive (see Wilcox, col. 12, lines 33-37).

Accordingly, Wilcox discloses determining the address of the beginning of the next sector's worth of data such that the DMA can start transferring data to sequentially address locations within the disk drive memory. As presented above, data cannot be loaded into disk drive memory unless the disk drive has

completed its startup. As such, determining the address of the disk drive memory for transferring data from the DMA to the disk drive memory, as disclosed by Wilcox, fails to teach or suggest subsequent to transferring the command causing the start up and before the completion of the start up, as claimed, preparing disk transaction information.

Moreover, the rejection in response to Applicant's argument alleges that the "START command starts the transferring of data to the disk drive as soon as there is sufficient data to [do] so (e.g., without waiting for the complete burst of data to be received)" shows the recited limitations subsequent to transferring the command causing the start up and before the completion of the start up, as claimed preparing disk transaction information. Applicant respectfully traverses in view of the following.

Transferring of data to the disk drive without waiting for the complete burst of data to be received, as disclosed by Wilcox, teaches that the startup associated with the disk drive is complete because otherwise the disk drive fails to receive the data being sent. In other words, the disk drive is incapable of receiving data without successfully starting up. As such, Wilcox fails to teach or suggest that subsequent to transferring the command causing the startup and before the completion of the startup, preparing disk transaction information, as claimed.

Accordingly, the alleged AAPA alone or in combination with Maleck and Wilcox fails to render independent Claim 14 obvious, under 35 U.S.C. §103(a). Independent Claims 1 and 9 recite limitations similar to that of Claim 14 and are patentable for similar reasons. Dependent claims are patentable by virtue of their dependency. As per Claims 2-5, 7-8, 10-11, 13, 15-17 and 19-20, Applicant respectfully asserts that these claims overcome the alleged AAPA for reasons discussed above.

As per Claims 6, 12 and 18, Wilcox discloses that transferring data as soon as there is sufficient data minimizes the delay from the start of the data transfer, thereby reducing the latency between receipt of data to be stored on disk drives (see Wilcox, col. 2, lines 19-23 and 51-54). Reducing the latency from the start of the data transfer, as disclosed by Wilcox, occurs after the disk drive has gone through the startup procedure whereas the startup latency is directed to a process prior to the data transfer, as claimed. As such, Wilcox fails to teach or suggest reducing a startup latency of the disk drive, as claimed.

As such, allowance of Claims 1-23 is earnestly solicited.

For the above reasons, Applicant requests reconsideration and withdrawal of the rejections under 35 U.S.C. §103.

CONCLUSION

In light of the above listed remarks, reconsideration of the rejected Claims 1-22 is requested. Based on the arguments presented above, it is respectfully submitted that Claims 1-23 overcome the rejections of record and, therefore, allowance of Claims 1-23 is earnestly solicited.

Please charge any additional fees or apply any credits to our PTO deposit account number: 50-4160.

Respectfully submitted,
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